From: "Carlin, Jayne" <Carlin.Jayne@epa.gov>
To: "Amy King" <amy.king@tetratech.com>
Date: 8/3/2018 3:58:48 PM
Subject: Technical Direction for Deschutes River TMDL Development Support under TSWAP Contract Tetra Tech EP-C-17-046 Task Order 1

Hi Amy,

Attached is the Technical Direction for Deschutes River TMDL development support under TSWAP Contract Tetra Tech EP-C-17-046 Task Order 1.

Feel free to email me or call me with any questions.

Respectfully,

Jayne Carlin, Task Order COR

Watersheds Unit
US EPA, Region 10
1200 6th Ave, Suite 900 (OWW-192)
Seattle, WA 98101-3140
(206) 553-8512
carlin.jayne@epa.gov <mailto:carlin.jayne@epa.gov>

Technical Direction (TD)
TSWAP Contract
EP-C-17-046
Task Order 1

PWS Task(s): Task 2, TMDL Development
Task 7, Model Application

Title: *Water Quality Modeling and TMDL Development for the Deschutes River, Percival Creek and Budd Inlet Tributaries*

Date of Technical Direction Discussion or Issuance: August 2018

Estimated Level of Effort: 440 hours for Phase I only

Purpose: Provide technical and modeling support for the revision of state-developed TMDLs for multiple parameters in the Deschutes River.

Background, Tasks, Deliverables and Schedule:

Background
There is currently a multi-phase process to address water quality impairments for waters flowing into South Puget Sound. The Deschutes River originates in heavily forested regions of the Bald Hills and flows northward to Capitol Lake, which then flows to Budd Inlet, which connects to Puget Sound. Capitol Lake was formed in 1951 as an impoundment of the Deschutes estuary to create a reflecting pool for the State Capitol building. The Washington Department of Ecology ('Ecology') developed the Deschutes TMDL to address the riverine segments upstream of Capitol Lake and Budd Inlet. The watershed covered in the Deschutes TMDL includes the Deschutes River, Percival Creek, and tributaries to Budd Inlet. It is situated within the boundaries of Thurston and Lewis Counties in Washington and includes the cities or towns of Olympia, Lacey, Tumwater, and Rainier. The TMDL was written to address impairments for bacteria, temperature, dissolved oxygen (DO), pH, and fine sediment. Ecology submitted the TMDL to EPA in 2015, and provided supplemental information in 2017.

EPA took a partial approval and partial disapproval action on the TMDL (comprised of 73 unique waterbody-pollutant pairs) on June 29, 2018. The disapproved portions, listed below, will need to be revised and established by EPA, including the 14 waterbody-pollutant pairs which need to go through public participation.

- Bacteria – 17 pairs (14 of which only need to go through public participation process)
- Temperature – 5 pairs
- DO – 11 pairs
- pH – 3 pairs
- Fine sediment – 1 pair

In this technical direction, the Contractor will provide technical support on revising the TMDLs listed above. Ecology is currently developing a TMDL for Budd Inlet (anticipated completion in 2020). (b)(5)

(b) (5)

Phase 1

Tasks

1. The Contractor will set up two initial planning conference calls. The first conference call will include representatives from EPA (see "Contacts" section below) and the Contractor to discuss the project background, scope, goals, schedule, and projected outcomes and outputs. The goal of the first call will be to provide the Contractor with enough information for the Task Order Contract Officer Representative (TOCOR) to finalize the technical direction and begin working on the tasks outlined in this technical direction. The second planning call will include representatives from EPA, Ecology, and the Contractor. The TOCOR will provide the participant list, along with their contact information for this call. The purpose of this call will be to learn from Ecology about their work on the Budd Inlet TMDL, and identify any areas of concern or overlap that we should be aware of during the development of the Deschutes TMDL. Both of these calls will establish a schedule for regular check-in calls with two teams: (1) EPA and the Contractor; and (2) EPA, Ecology, and the Contractor. All contact information is listed below. The Contractor will put together notes from the call summarizing key points, outcomes, and action items.

2. The Contractor will set up regular check-in calls, as described in Task #1. It is anticipated that the total number of calls will not exceed 8 (3-4 with Ecology and 4-5 with EPA and the Contractor only). The purpose of the calls with EPA and Ecology will be to check-in on concurrent progress being made on the modeling for the Budd Inlet TMDL and the Deschutes TMDL, share input/output files and model results, and resolve any technical concerns. The check-in calls with EPA will be to discuss draft products, have more in-depth discussions on areas needing more focus, and resolve technical concerns. The Contractor will put together notes from each call summarizing key points, outcomes, and action items.

3. In coordination with EPA, the Contractor will set up a file transfer site for participants to upload data and information.

4. The Contractor will develop a draft TMDL technical approach memorandum. It will include a summary of relevant data and information and recommended approach(s) to revise the existing QUAL2k (and possibly GEM) model(s) and how those data will be used in the updates to the models. The memorandum should provide recommendations regarding the cost and value of updating the model(s), based on the TMDL revision needs. It should also include the approach that will be used to revise the disapproved segments of the TMDL (i.e., how the loading capacity and wasteload and load allocations will be determined). The Contractor will address a maximum of one set of comments and finalize the technical approach memorandum. It is assumed that the comments received will be inclusive of both EPA and Ecology comments.

5. The Contractor will develop a Quality Assurance Project Plan (QAPP) for the water quality modeling work agreed upon in Task #4. Depending on the data needs determined during or after the development of the technical approach memorandum, the Contractor may also need to develop a QAPP for data collection (note: the level of effort estimate only includes development of a modeling QAPP at this time). The Contractor will address a maximum of one set of comments on the modeling QAPP and finalize the QAPP. The QAPP document is anticipated to follow the EPA template for modeling QAPPs.

Deliverables and Schedule

(b) (5)

Task	Deliverable
1 & 2. Kick-off conference call and check-in calls	Call notes summarizing key points, outcomes, and action items
3. File transfer site	A site that can be viewed and used by EPA, Ecology, and the Contactor to share files.
4. Technical approach memorandum	Draft and final technical approach memorandum, including a tracked version to show how comments were addressed.
5. QAPP for modeling	Draft and final QAPP(s), including a tracked version to show how comments were addressed.

As the EPA Task Order Contract Officer Representative (TOCOR), I have considered the sensitivity of any information generated by this TD. The following applies:

[X] I have no reason to believe that any sensitive information will be generated as part of this TD
[ ] I have reason to believe that sensitive information will be generated as part of this TD. The following safeguard measures shall be implemented: N/A

[X] This TD does not include additional work outside the scope of the task order.

Contact Information:

EPA TOCOR
Jayne Carlin
US EPA, Region 10
1200 6th Ave, Suite 900 (OWW-134)
Seattle, WA 98101-3140
carlin.jayne@epa.gov
(206) 553-8512

EPA Technical Contacts
Miranda Hodgkiss – Lead on TMDL development
US EPA, Region 10
1200 6th Ave, Suite 900 (OWW-192)
Seattle, WA 98101-3140
hodgkiss.miranda@epa.gov
(206) 553-0692

Chris Zell – Lead on modeling analysis

US EPA, Region 10
1200 6th Ave, Suite 900 (OWW-192)
Seattle, WA 98101-3140
zell.christopher@epa.gov
(206) 553-1353

Ecology Technical Contact
To be determined.

Appendix A: Additional Potential Future Tasks to Support TMDL Development

Phase 2 (tentative)

6. Based on the process outlined in the technical memorandum, the Contractor will use the existing base steady-state QUAL2k model (already calibrated) as a starting point for developing new TMDL loading capacities, load allocations, and wasteload allocations. The Contractor should prepare a summary of the model outputs, including tables, figures, and other relevant outputs that document the application of the model and the TMDL loading analyses. The Contractor should provide this summary as an appendix to the TMDL, which will undergo public review along with the TMDL. The Contractor should be prepared to provide EPA with any requested model input/output data and/or an organized model package upon EPA's request. The Contractor will address a maximum of two sets of comments from EPA and finalize the modeling analysis summary. The updates to the model will include the following:

7. The Contractor will revise the existing TMDL document, updating the relevant information and writing sections where there was TMDL information missing. The number of draft TMDL document versions is not to exceed three with two opportunities for review and comment. (b) (5)

(b) (5)

The table below summarizes the waterbody-pollutant combinations that will be addressed by the subtasks above. Yellow shading identifies new TMDLs, pink shading identifies TMDLs to be revised or refined, and orange shading represents TMDLs currently developed, but where new modeling is anticipated.

Waterbody	Waterbody-pollutant combinations				
	Temperature	DO	pH	Bacteria	Sediment
Huckleberry Creek	•				
Reichel Creek	•	•		•	
Tempo Lake Outlet	•				
Ayer (Elwanger) Creek	•	•	•		
Unnamed Spring to Deschutes River	•				
Adams Creek			•	•	
Black Lake Ditch		•	•		
Lake Lawrence Creek		•			
Percival Creek		•			
Deschutes River		•			•
Ellis Creek				•	
Indian Creek				•	
Mission Creek				•	
Moxlie Creek				•	
Schneider Creek				•	
Spurgeon Creek				•	

8. (b) (5)

(b) (5)

Task	Deliverable	(b) (5)
6. QUAL2k modeling	Summary of updated model results and outputs as an appendix to TMDL document.	
7. TMDL report	Revised TMDL document, including two drafts and one final, with tracked versions to show how comments were addressed.	
8. Response to Comments Support	Response to comments document, as an appendix to the TMDL document.	